Report Of Work

(1999 IP Survey)

On

Mann Property

Mann Township
Porcupine Mining Division
Northeast Ontario

For

Mr. Leonard Hill
OPAP 99-33

Geosereve Canada Inc

R J Daigle
October 4, 1999

1.0 Summary

Mr. Leonard Hill of Timmins Ontario completed an **Induced Polarization** Survey over two of his claims in Mann Township, Porcupine Mining Division, Northeast Ontario. The selected IP traverse explored part of claims **1154625** and **1154623** which form part of the nineteen claim group owned by Mr. Hill. The IP survey was read by Geoserve Canada Inc. in October 1999. The results of the 1999 IP in conjunction with the 1998 Mag and MaxMin surveys encourage additional work.

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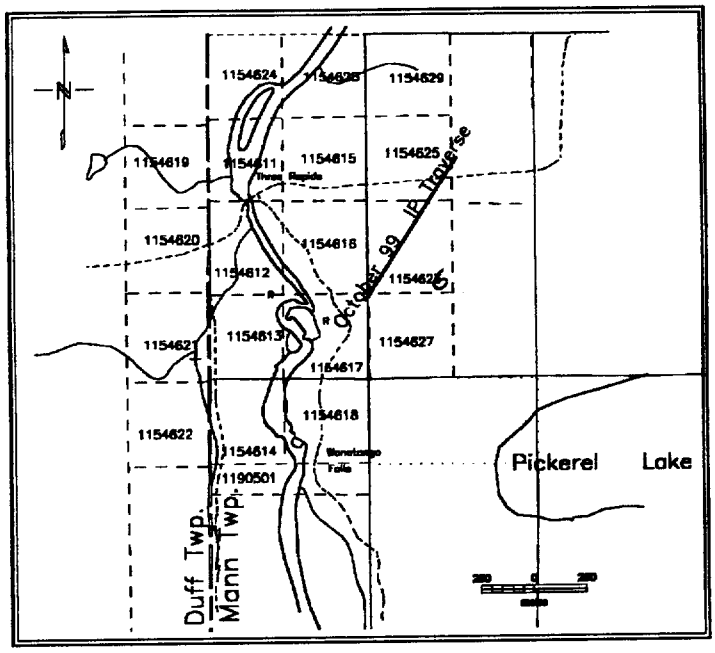
1: 5000 SECTION: L 1700

Figure 1: property Location

2.0 Introduction

Geoserve Canada Inc. of South Porcupine, Ontario was commissioned by Mr. Leonard Hill to do a Time Domain Induced Polarization Survey on the Mann Property. The survey completed from October 1st to October 3rd covered claims 1154625 and 1154623 registered to Mr. L. Hill. The two claims covered are part of a nineteen contiguous claim group in Mann and Duff Townships, Porcupine Mining Division, Northeast Ontario. The property is approximately fifty kilometers north of Timmins, Ontario. The property is accessible by traveling nineteen kilometers west along a gravel road that crosses the Frederick House River approximately nineteen kilometers north of the Iroquois Falls cross roads (HWY 11 and 598), along highway 11. The results of the October 1999 Induced Polarization Survey forms the basis of this report.

Figure 2



The claim group is geologically situated in the Stoughton-Roquemaure assemblage (theoleiitic to komatiitic affinity, J. A. Ayer et al, 1998). The claims lie along the south boundary of the said Mann complex. The complex is primarily made of ultramafic / mafic intrusive and extrusive rocks. The objective of this work is to locate geological settings that may host Ni-Cu sulphide occurrences. Platinum, palladium, and diamonds are also conceivable targets in the area. The claims have a limited history of past work that is summarized in a report written by Mr. Tod Keast 1998, for Mr. Leonard Hill. Significant to say that Mr. Leonard Hill explored these claims since the 1980's and is now applying state-of-the-art geophysical techniques. The author made use of the 1998 magnetic and electromagnetic survey results to help interpret the Induced Polarization section.

3.0 1999 IP Survey

Procedure

Geoserve assessed the 1998 magnetic and HLEM survey and derived a favorable area to do a traverse using the Time Domain Induced Polarization technique. Line 1700W was selected since it had a bedrock horizontal loop electromagnetic conductor corresponding with a magnetic low. Two lines were originally selected but available funds limited the survey production. Crews used the BRGM IP6, six channel (ten window) receiver in conjunction with the Pheonix 3000 watt transmitter to do the survey. The Pole Dipole Array was used with a 50 meter dipole separation. The infinity electrode was established 1700 meters easterly along the access road. The data was downloaded to PC and processed using Geosoft. The data is presented on a 1: 5000 section showing apparent resistivity in ohms/ 50 meters and chargeability in mV / V. Crews reported difficulty obtaining signal at the south limit of line 1600 E when attempting to read. This can be explained by channeling of the current within the inferred graphitic conductor along the south limit of the survey lines.

Results

Section 1700E presented here-in shows an intense chargeability anomaly under 1125 N with a correlating resistivity low. All gathered information suggests that the source is of graphitic origin. Flanking grid north another anomaly between 1200 N and 1300 N occurs in conjunction with a high mag. The third chargeability anomaly seen from 1350 N to 1400 N has a moderate mag high. Both later anomalies have a low resistivity association. The resistivity section infers that the first anomaly (1100N to 1200 N) lies beyond n = 1 level (theoretically 50 meters deep). Gathered information postulates the sources dip grid north.

4.0 Conclusion

The survey is most successful delineating bedrock targets. It appears the selected section straddles alongside a conductive source from 1200 N to 1600 N. The 1998 magnetic survey does not refute this possibility. This puts the section at a disadvantage for drill targeting.

Additional work is left to the clients discretion.

Respectfully Submitted For Approval;

Date: October 5, 1999

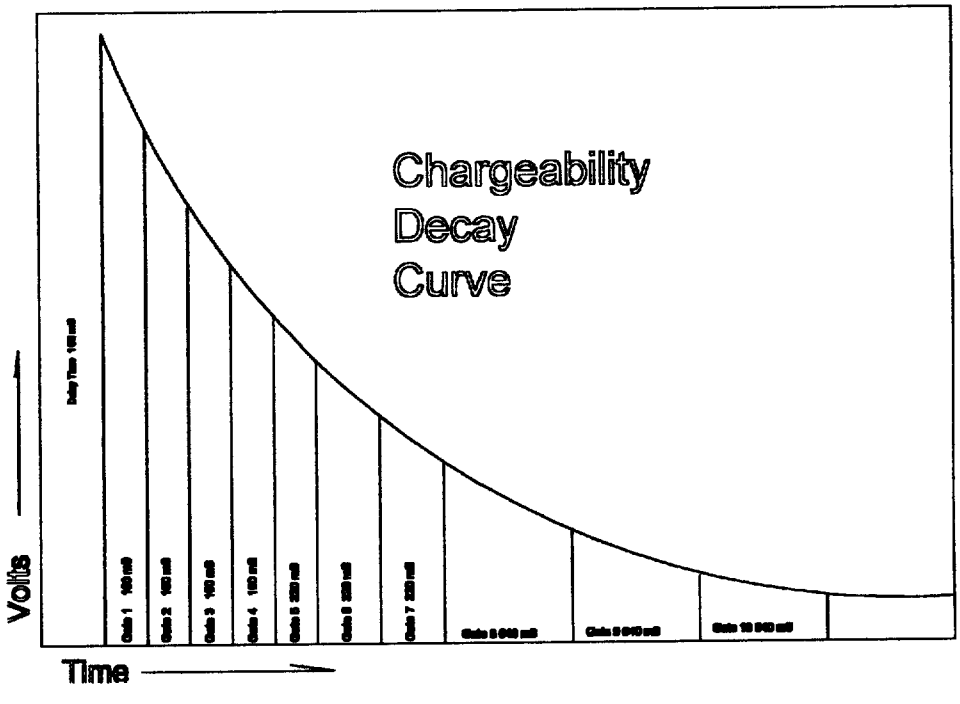
Richard Daigle

5.0 Survey Theory

Standard Definitions of Chargeability

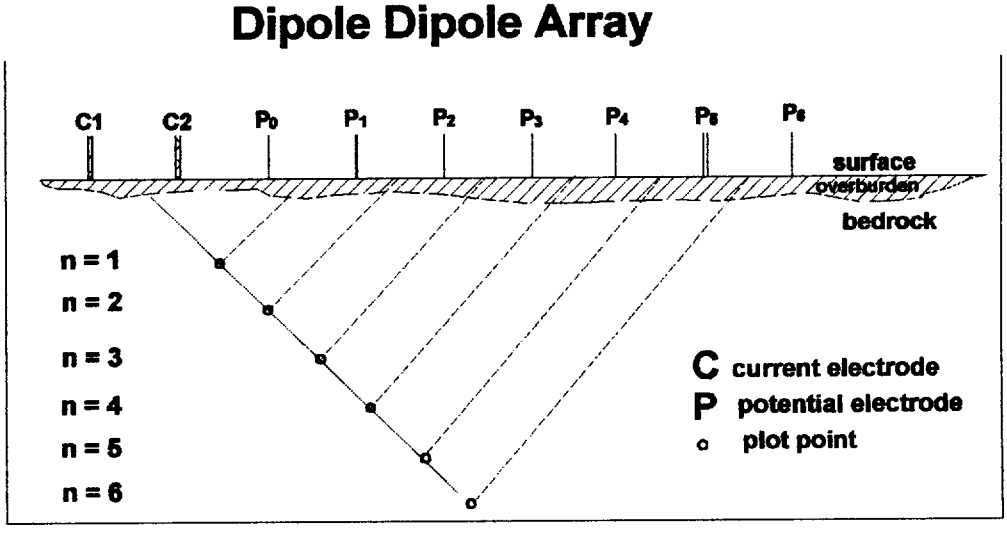
The IP parameter, chargeability (M) varies with time. For practical reasons the entire decay curve is not sampled. Instead the secondary voltage is sampled one or more times at various intervals. Because the secondary voltage is received at extremely low levels in many prospecting situations, measurements of its amplitude at any given time is extremely susceptible to noise. Therefore, the secondary voltage is usually integrated for a period of time called a **gate**. Thus, if the noise has a zero mean, the integration will tend to cancel the noise. The Newmount M Factor is a standard time domain IP parameter. The **time delay**, of **80 milliSeconds** (used by the IP6) was chosen to allow time for normal electromagnetic effects and capacitive coupling effects between the transmitter and receiver to attenuate so that the secondary voltage consists only of the IP decay voltage.

The IP6 total integration time of 1840 milliSeconds (gate) is divided into ten individual gates. The time-constant of the IP dispersion curve, Cole-Cole dispersion (W H Pelton, 1977), obtained from the ten individual gates (windows) is directly related to the physical size of the metallic particles. This data is available at the clients request since all of the obtained field data is archived (downloaded) to computer.



IP Method

The phenomena of Induced Polarization (IP) was reported as early as 1920 by Schlumberger. The IP survey technique allows a variety of arrays (which all have advantages and disadvantages) and reads two separate elements;(1)The chargeability or IP effect (M) and Apparent Resistivity. The IP technique is useful for detecting sulphide bodies and is also useful as a structural mapping tool. The IP effect is the measurement of the residual voltage in rocks that remains after the interception of a primary voltage. It includes many types of dipolar charge distributions set up by the passage of current through consolidated or unconsolidated rocks. Among the causes are concentration polarization and electrokinetic effects in rocks containing electronic conductors such as metallic sulphides and graphite. The term overvoltage applies to secondary voltages set up by a current in the earth which decays when it is interrupted. These secondary effects are measure by a receiver via potential electrodes. The current flow is actually maintained by charged ions in the solutions. The IP effect is created when this ionic current flow is converted to electronic current flow at the surface of metallic minerals (or some clays, and platy silicates). The IP method is generally used for prospecting low grade (or disseminated) sulphide ores where metallic particles, sulfides in particular, give an anomalous response. Barren rock (with certain exceptions) gives a low response. In practice, IP is measured in one or two ways;(1) In a pure form, a steady current of some seconds (nominally 2 seconds) is passed and abruptly interrupted. The slowly decaying transient voltage existing in the ground are measured after interruption. This is known as the time domain method. The factor Vs/ Vp is the integrated product for a specified time, and several readings are averaged (suppressing noise and coupling effects). The resultant chargeability, M is essentially an unitless value but it is usually represented in mV/V. The second method entails a comparison of the apparent resistivity using sinusoidal alternating currents of 2 frequencies within the normal range of 0.1 to 10.0 cps.. The factor used to represent the IP effect by this frequency domain method is the percent frequency effect (PFE) and is defined by (R1-R2)/R1x100% where R1 and R2 are the apparent resistivities at the low and high frequencies.



Use and Limitations

The effective depth of penetration of any IP survey is a function of the resistivity of the surface layer('s) with respect to the resistivity of the lower layer. All arrays have different effects from this resistivity contrast, some are less affected than others. When the surface layer is 0.01 of the lower layer, the effective penetration is very poor hence the term masking. Masking occurs most often in areas of thick clay cover. The size of the target therefore becomes important when detection is desirous under a conductive surface layer. The frequency domain methods are the most adversely affected by masking as inductive coupling can be much greater than the response. The Newmount M Factor is a standard time domain IP parameter. The gate delay, of 80 mSeconds (used by the TDR-6) was chosen to allow time for normal electromagnetic effects and capacitive coupling effects between the transmitter and receiver to attenuate so that the secondary voltage consists only of the IP decay voltage.

The IP6 total integration time of 1580 milliSeconds (gate) is divided into ten individual gates. The time-constant of the IP dispersion curve, Cole-Cole dispersion (W H Pelton, 1977), obtained from the ten individual gates (windows) is directly related to the physical size of the metallic particles. This data is available at the clients request since all of the obtained field data is archived (downloaded) to computer.

IP6 Specifications

- 6 Channel Input
- Up to 10 chargeability windows
- signal waveform: symmetrical time domain (ON+, OFF, ON-, OFF) with pulse duration of 1, 4, and 8 seconds).
- input impedance : 10 Mohms
- input overvoltage protection up to 1 000 Volts
- input voltage range: each dipole 8 V max, sum of voltages dipoles 2 to 6= 12 V max.
- overload indication
- automatic gain ranging
- automatic staking, automatic SP bucking (±1 Volt) with linear drift correction up to 1 mV per Second.
- sampling rate: 10 mS.
- 50 to 60 Hz power line rejection greater than 100 dB.
- accuracy in syncronization: 10 mS.
- common mode rejection: 86 dB (for Rs= 0)
- primary voltage; resolution 1μV, accuracy 0.3% and 3% max.
- chargeability; resolution 0.1 mV/V, typical .6%, max of 2% of reading ±1 mV/V for Vp < 10 mV and > 100 mV.
- battery test; manual and automatic
- grounding resistance measurement from .1 to 128 Kohms.
- memory capacity; 600 measurements.
- transfer rates; 300 to 19200 bauds.
- dimensios; 30 x 20 x 24 cm.
- weight 7.5 kg
- operating temperatures; -40°C to 70°C.

6.0 Certification

I **Richard Daigle** residing at 119 Girdwood Crescent in the city of Timmins, ON, Certify;

1. I have received an Electronic Technologist Certificate in 1979 from Radio College of Canada, Toronto, ON. Am a member of the following associations; OACETT, GAC, AGO.

2. I have been computer literate and utilized geophysical equipment for fifteen years.

3. Experienced Max-Min (HLEM) interpretations along with field operations under the supervision of John Betz, 1979- 81.

4. Geophysicist Assistant for Kidd Creek Mines under the supervision of Mr. Doug Londry, 1981- 85.

5. Fulfilled geophysical contracts in NE Ontario, 1985-87.

6. Fulfilled geophysical contracts (IP, HLEM, MAG, SP) along with property assessments in Eastern Canada, 1987- 92.

7. I have been employed by M.C. Exploration Services Inc as Geophysical Evaluator from 1992 to 1997.

8. Am owner operator of Geosereve Canada Inc.

8. I have no direct interest in the property reported upon.

DATE: Jan 23/00
Timmins, ON

R. J. Daigle

1999 OPAP FINAL SUBMISSION

for the

MANN PROJECT

MANN and DUFF TOWNSHIPS

PORCUPINE MINING DIVISION

NTS 42 A/NW

January 26, 2000

Todd Keast, Len Hill

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INTRODUCTION

Between August 1999 and January 2000, an integrated exploration program was completed on Mr. Lenonard Hill's OPAP Mann Project. The exploration program was directed towards identifying nickel-copper sulphide (Ni-Cu) mineralization associated with the Mann Intrusive complex. The exploration program included linecutting, horizontal loop electromagnetic (HLEM) surveys, magnetometer (Mag) surveys, Induced Polarization (IP) surveys, and diamond drilling. Mapping and prospecting was not completed due to lack of outcrop exposure.

The results of the work indicate the discovery of several new conductive horizons, and the drill testing of one HLEM/Mag target identified during last years program. A single line of IP over this target identified a strong zone of chargeability. Diamond drilling intersected a wide package of ultramafic rocks which contain disseminated sulphides. A strong zone of chargeability was not intersected, suggesting that the drill hole was not extended far enough. The disseminated sulphides encountered in the hole indicates good potential for the discovery of Ni-Cu sulphide mineralization. Further work on the Mann Project should include additional IP surveys to delineate the newly identified conductive horizons, and diamond drill testing the new targets and to extend the recently completed drill hole.

PROJECT LOCATION

The Mann Project is located 47 km north of Timmins Ontario, in Duff Township and Mann Township, of the Porcupine Mining Division (**Figure 1**). The specific project location is enclosed on the following **Table 1**.

Table 1 Project Location

Area:	Timmins Area
Township:	Duff and Mann
Mining Division:	Porcupine
Claim Map:	G-3234 G-3537
NTS:	42 A/NW
Latitude:	48° 52'
Longitude:	81° 02'

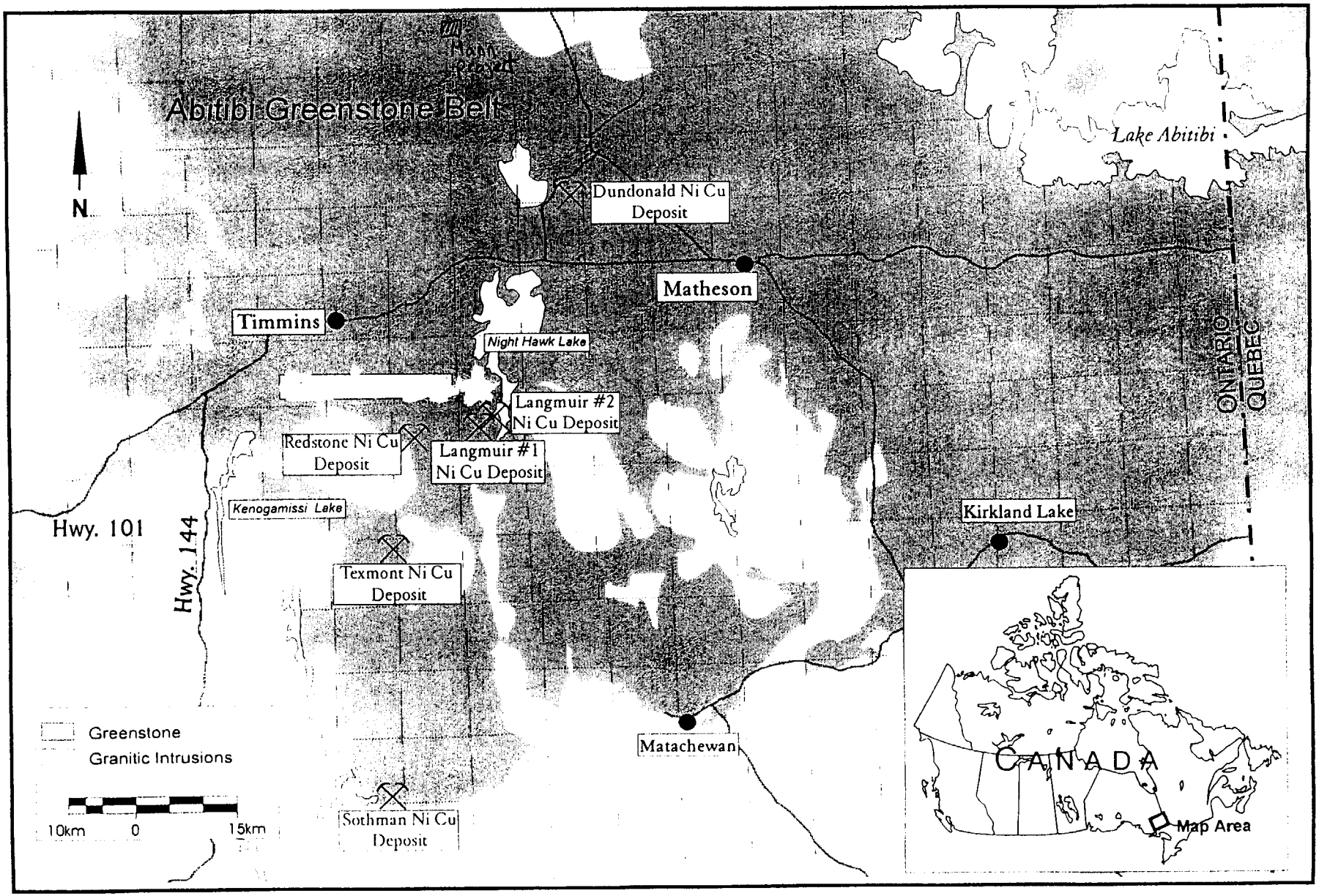

Abitibi Greenstone Belt
N
Lake Abitibi
Dundonald Ni Cu Deposit
Matheson
Timmins
Night Hawk Lake
ONTARIO
QUEBEC
Langmuir #2 Ni Cu Deposit
Redstone Ni Cu Deposit
Langmuir #1 Ni Cu Deposit
Kenogamissi Lake
Hwy. 101
Hwy. 144
Kirkland Lake
Texmont Ni Cu Deposit
Greenstone
Granitic Intrusions
10km 0 15km
Matachewan
Sothman Ni Cu Deposit
CANADA
Map Area

Figure 1

ACCESS

The Mann Project is located 47 km north of Timmins, Ontario. Access to the property is along Hwy 11, approximately 14 km northwest of the Iroqouis Falls turnoff (highway 578). From this location travel west along an all-season gravel road for 19 km until you reach a bridge over the Frederick House River. This is the central portion of the Mann Project.

LAND TENURE AND OWNERSHIP

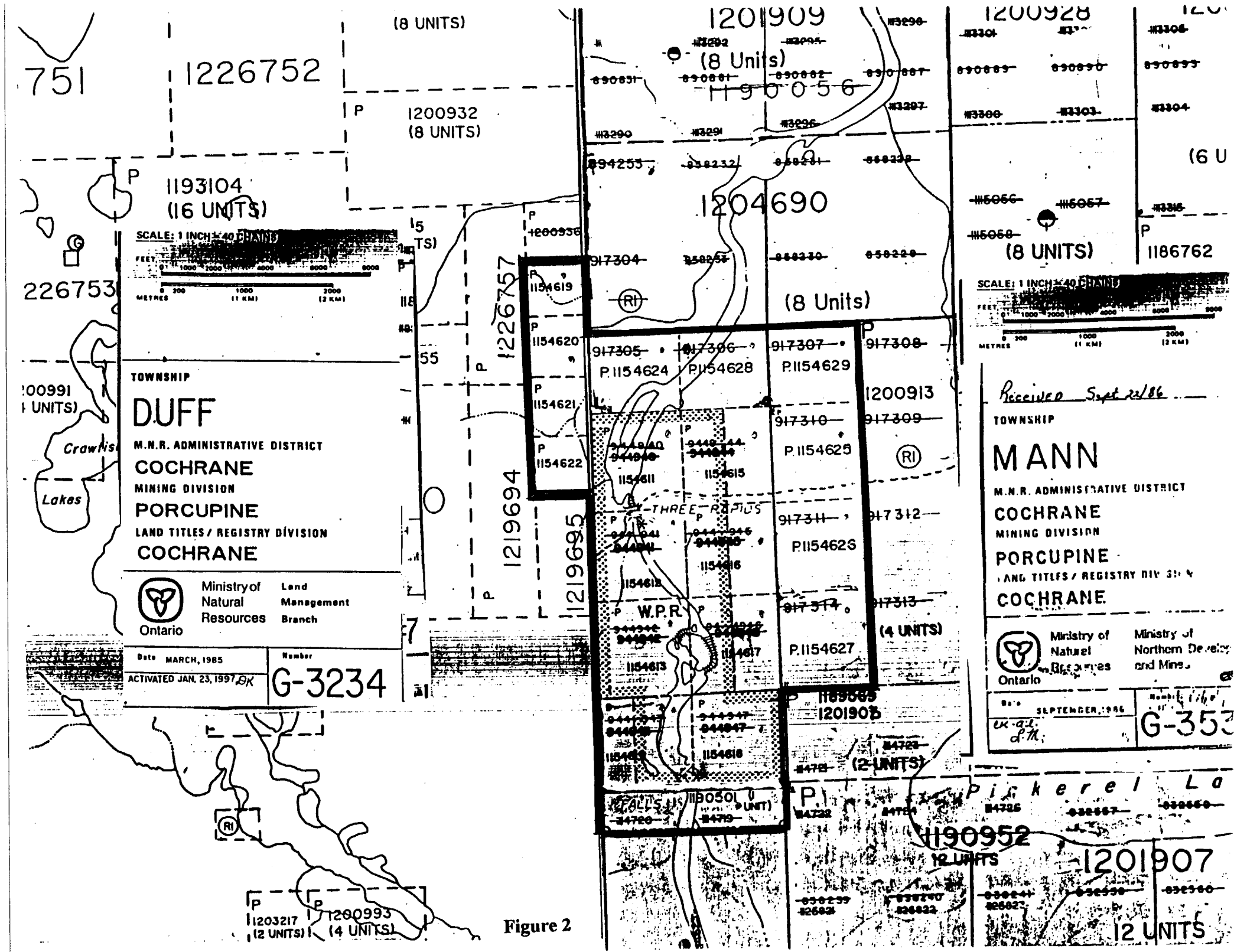
The Mann Project consists of 19 claims covering 304 hectares (**Figure 2**). The claims are registered to Mr. Leonard Hill (100%) of South Porcupine, Ontario.

PROSPECTING TARGET

The prospecting target sought for is Ni-Cu massive sulphide deposit hosted within ultramafic flows and intrusions. Platinum and palladium are secondary exploration targets that may be associated with a layered ultramafic intrusion. The exploration model is that of Ni-Cu sulphide deposits of the Abitibi subprovince (Langmuir, Alexo, Montcalm). Ni-Cu sulphide deposits are generally associated with ultramafic and gabbroic volcanic rocks of both intrusive and extrusive nature. The Ni-Cu sulphide deposits are generally associated with a specific sulphide rich horizon, which is generally conductive due to the high sulphide content. A summary of Ni-Cu sulphide deposits from the Timmins Area is included in **Table 2**.

Table 2 Ni-Cu Sulphide Deposits in the Timmins Area

Deposit Name	Grade	Tonnes
Texmont	0.93% Ni, Cu N.A.	3,190,000
Langmuir (1&2)	2.09% Ni, 0.08% Cu	1,600,00
Alexo	4.5% Ni, 0.50% Cu	52,000
Redstone	2.39% Ni, 0.09% Cu	1,220,000
Montcalm	1.44% Ni, 0.68% Cu	3,560,000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(8 UNITS)
(8 Units)
1186762
SCALE: 1 INCH = 40 CHAINS
METRES
TOWNSHIP
DUFF
M.N.R. ADMINISTRATIVE DISTRICT
COCHRANE
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
COCHRANE
Ministry of Natural Resources
Land Management Branch
Ontario
Date MARCH, 1985
ACTIVATED JAN. 23, 1997 DK
Number
G-3234
Received Sept 22/86
TOWNSHIP
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M.N.R. ADMINISTRATIVE DISTRICT
COCHRANE
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
COCHRANE
Ministry of Natural Resources
Ministry of Northern Development and Mines
Ontario
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917313
917314
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P.1154628
P.1154629
P.1154625
P.1154626
P.1154627
1200913
1154611
1154615
1154616
1154613
1154617
1154618
THREE RAPIDS
W.P.R.
(4 UNITS)
1189069
1201908
(2 UNITS)
1190952
12 UNITS
1201907
12 UNITS
1203217
(2 UNITS)
1200993
(4 UNITS)
Pickerel La
RI

Figure 2

REGIONAL GEOLOGY

The Mann Project is situated with the Mann complex of the Abitibi subprovince. It is located at the northwestern end of the belt of ultramafic/mafic intrusive and extrusive rocks included in the Stoughton-Roquemaure assemblage, as recognized by Jackson and Fyon (1991). The geology of Mann Township was mapped by Satterly (1959), and Hunt and Richard (1980), and included in the regional studies of Jensen and Langford (1985).

In addition to ultramafic and mafic intrusions, the major lithologies in the area are predominantly northwestly striking mafic metavolcanics accompanied by minor intermediate matavolcanics and interflow sediments. The Mann complex is folded along a west to northwest trending fold axes.

LOCAL GEOLOGY

The property geology is based upon work by government agencies, work in the area by previous operators, and a research paper by Good, Crocket, and Barnet (1997). Regional mapping and limited diamond drilling on the project (three holes) indicates the presence of ultramafic intrusions. Diamond drilling to the north of the project area has intersected anomalous Ni and Cu mineralization in ultramafic flows, intrusions and sediments. The drill holes were planned to test conductive horizons. Anomalous Ni-Cu mineralization was reported in six diamond drill holes.

Research by Good, Crocket and Barnet on the central portion of the Mann Project concluded that "**Clinopyroxenite in the mafic-ultramafic complex in Mann township apparantly crystallized from magma similar to that which formed sulphide bearing komattiite at the Ni-Cu Alexo Deposit**". This research indicates that exploration potential exists for the development of Ni-Cu sulphide mineralization in the Mann Complex.

SUMMARY OF PREVIOUS EXPLORATION

Exploration work on the Mann Project is limited. Very little exploration work has been completed on the project. Mr. Len Hill has completed a total of 7 diamond drill holes on

the property. The diamond drilling was focussed along several locations along the Frederick House River. The purpose of the drill holes was to evaluate the platinum group element and diamond potential of the property. Mr. Hill reported intersecting a single diamond in drill core, and has panned several diamonds from the river. A number of sections of core which contained fine grained sulphides.

Holmer Gold Mines completed one diamond drill in 1973 to test a vertical EM anomaly. A summary of the hole is as follows:

From – To (feet)	Rock Type
0 – 40 ft	Casing
40 – 368.5	Peridotite
368.5 – 379.5	Ultramafic Porphyry
379.5 – 393.5	Peridotite
393.5 – 420	Ultramafic pyroxenite
420 – 499	Ultramafic Porphyry
499 – 550 (E.O.H.)	Peridotite

Mineralization to account for the VEM anomaly was not encountered in the drill hole. Plotting of the drill hole on the recently cut grid indicates that the hole was spotted south of the EM anomaly and possibly overshot the anomaly. Follow up work on the unexplained anomaly was not reported.

PROJECT JUSTIFICATION

The justification for the Mann Project is based upon two important features;

1) The Mann Project is situated within the Mann Complex, which has recently been shown to have the same chemistry as ultramafic rocks which host the Alexo Ni-Cu sulphide deposit.
2) Ni-Cu sulphide deposits are accumulations of semi-massive to massive sulphide minerals. They are conductive horizons that may be detected with EM geolphysical techniques. A number of airborne EM anomalies are located on the Mann project,

which have not been drill tested. A number of EM anomalies north of the Mann Project which have been tested intersected anomalous Cu and Ni mineralization.

1999 EXPLORATION PROGRAM

The 1999 exploration program on the Mann Project focussed on utilizing cost effective, proven field exploration techniques, geared towards identifying new exploration targets. The purpose of the program was to identify Ni-Cu sulphide targets, delineate their extent, and document the mineralization, alteration, and controls on mineralization.

A total of 9 kilometres of linecutting was completed at 100 metre spaced lines with picket stations established every 25 metres. The purpose of the linecutting was to provide a reference system for the geophysics and geological programs. In addition the grid was intended to provide a framework for further work on the property.

A total 6.275 km of HLEM surveys (1777 Hz, 444 Hz) were completed, with a 100 metre length cable and 25 metres spaced stations (**Map 1, Map 2**). The survey was intended to locate a number of airborne EM anomalies. The HLEM survey identified a significant EM anomaly at L 10+00 E / 6+25 N extending to L 6+00 E / 9+25 N. The EM anomaly is located along the flank of a moderate to strong magnetic feature. Several weaker single line anomalies were also identified.

A total of 8.15 km of magnetometer surveys were completed, with readings taken at 25m spaced stations (**Map 3**). The survey identified a significant magnetic high horizon, extending from L 6+00 E through to L 13+00 E in the northern portion of the grid.

A single line IP survey was completed on the southern portion of L 17+00 E, to cover a HLEM/Mag anomaly identified in last years OPAP program. The survey identified two zones of chargeability proximal to the axis of the HLEM anomaly. The first anomaly is centered at L 17+00 E / 12+50 N and consists of a moderate chargeability. The second anomaly is centered at L 17+00 E / 11+25 N, and consists of a strong chargeability with low resistivity. Interpretation suggests this anomaly is a conductive horizon. Details of

the IP survey is included in the separate included IP report.

A single diamond drill hole MAN-01 (**Appendix 1**) totaled 200.25 metres and was completed to test the two chargeability zones. Massive cumulate textured peridotite with two narrow sections of leucogabbro were intersected. Although zones of heavy sulphides were not encountered, fine disseminated sulphides were encountered throughout the hole. Re-interpretation of the geophysics in conjunction with the drilling indicates that the dip is near vertical, and that the hole should be extended and additional 50-75 metres.

RECOMMENDATIONS

Further work is recommended for the Mann Project. Additional diamond drilling in conjunction with down-hole EM surveys should be completed in order to evaluate the strong zone of chargeability on L 17+00 E. Additional drilling could be completed on the recently identified conductor extending from L 10+00 E / 6+25 N to L 6+00 E / 9+25 N.

Appendix I

Diamond Drill Log and Section

LEN HILL MANN PROJECT

DRILL HOLE RECORD

Northing: 1300
Easting: -1700
Elevation: 1000

Collar Azi.: 215°
Collar Dip: -45

Hole Length: 200.25
Completed: Jan 19, 2000
Logged by: Todd Keast

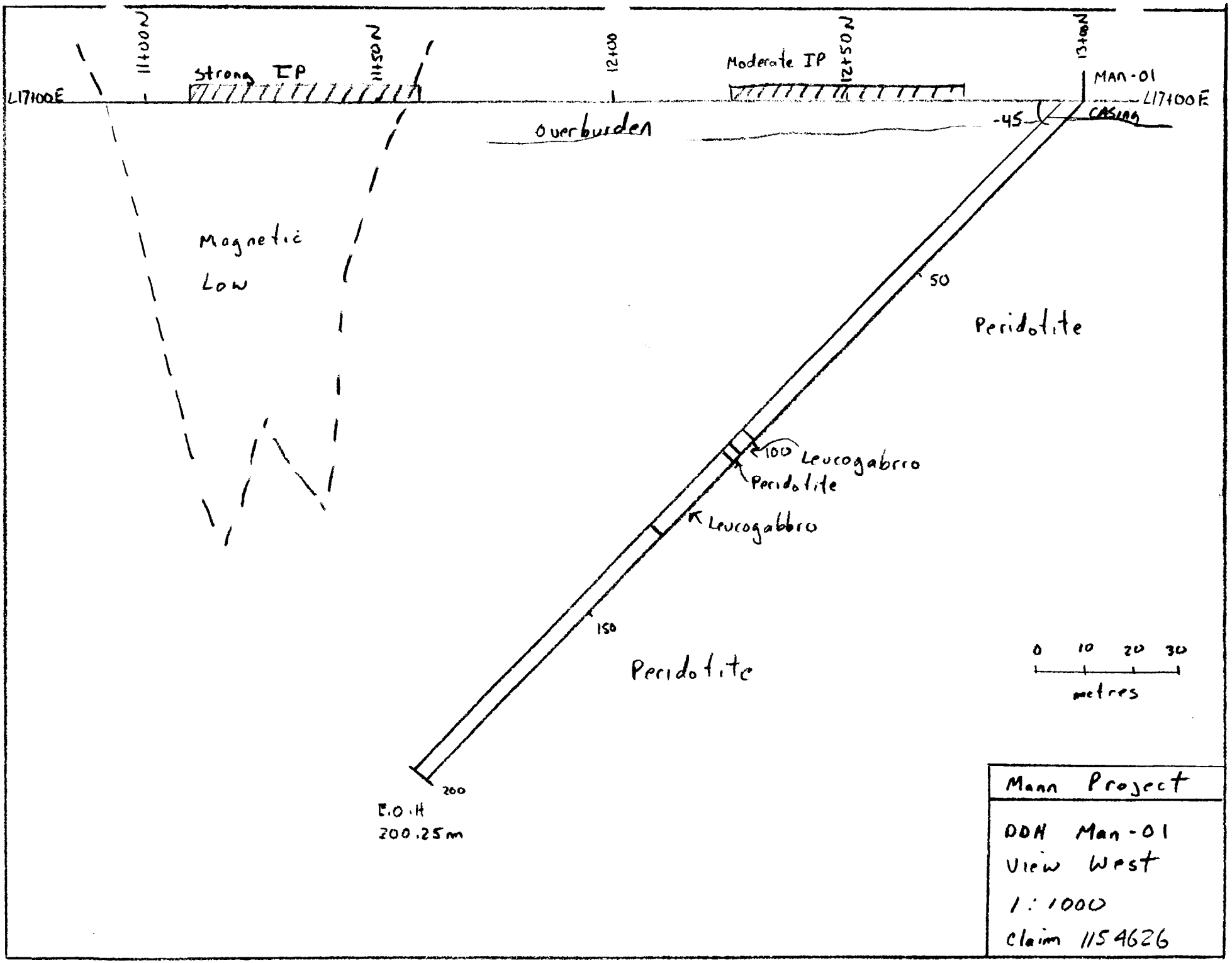
Drill Hole: MAN-01

Easting: L 17+00 W
Northing: 13+00 N
Property: Mann Project
Claim: 1154626
Drilled by: Larry Salo Drilling
Core Size: BQ
Date Started: Jan 15, 2000
Purpose: Test IP Anomaly

Todd Keast

From (m)	To (m)	Geology	Smpl	From (m)	To (m)	Lng (m)	CU PPM	PT PPM	PD PPM
.00	5.18	CASING							
5.18	100.28	PERIDOTITE	4681	53.95	54.50	.55			
		Massive ultramafic flow/intrusion. Dark black to brown, fine to medium grained,massive non-foliated peridotite. Approximately 75% 1-3mm round cumulate olive,gren-brown in color. Rare 1-3mm wide fractures, serpentine filled, approximately 65 deg to C.A. Rare fine sulphide grais of po and cpy <1mm in size. Hardness H 4-5, Magnetic Susceptibility MS 55-75.	4682	71.62	72.08	.46			
		5.18 6.71 Broken blocky core, fault gouge.							
		14.08 14.33 50% serpentine veins, shear slip planes, 50 deg to C.A.							
		26.51 28.65 Broken blocky core, 25% serpentine slip planes, all angles.							
		39.62 40.05 Talc serpentine fractures, 45 deg to C.A.							
		58.52 59.89 Fault gouge, broken blocky core.							
		71.62 71.90 Serpentine slip plane, 25 deg to C.A, 7-10% fine po.							
100.28	104.03	LEUCOGABBRO							
		Light green, medium to coarse grained with a sharp upper contact 80 deg to C.A. Sharp chilled contact, crystalline texture, barren of sulphides. H 5-6, MS 5.							
104.03	106.47	PERIDOTITE							
		Massive ultramafic flow/intrusion. Dark black to brown, fine to medium grained massive non-foliated peridotite. Approximately 75% 1-3mm round cumulate olive,gren-brown in color. Rare 1-3mm wide fractures, serpentine filled, approximately 65 deg to C.A. Rare fine grains of sulphide, po and cpy <1mm. Hardness H 4-5, Magnetic Susceptibility MS 85.							
106.47	128.78	LEUCOGABBRO							

From (m)	To (m)	Geology	Smpl	From (m)	To (m)	Lng (m)	CU PPM	PPM	PD PPM
			4683	114.91	115.22	.31			
		Light green, medium to coarse grained with a sharp upper contact 85 deg to C.A. Sharp chilled contact. 75% light green feldspar with 25% fine cumulate mafic material in the matrix. Downhole unit develops 1 cm wide mafic bands, 80 deg to C.A. Unit is barren of sulphides. H 5-6, MS 0.19.							
128.78	200.25	PERIDOTITE	4684	156.67	157.10	.43			
		Dark black fine grained massive ultramafic flow/intrusion. Rare serpentine slip planes 60 deg to C.A. Rare 1mm cooling fractures 80 deg to C.A. Rare grain of fine sulphide. H 4-5, MS 75-110.							
		Below 169 metres, unit becomes medium grained with a well developed cumulate texture, brown to green olivine, up to 2mm.							
		158.28 180.07 Broken blocky core, fault gouge 45 deg to C.A.							
		E.O.H.							
		Casing Removed From Hole.							
		Core Stored with Len Hill, South Porcupine.							


11+00N
11+50N
12+00
12+50N
13+00N
L17100E
Strong IP
Moderate IP
MAN-01
L17100E
-45
CASING
Overburden
Magnetic
Low
50
Peridotite
100
Leucogabbro
Peridotite
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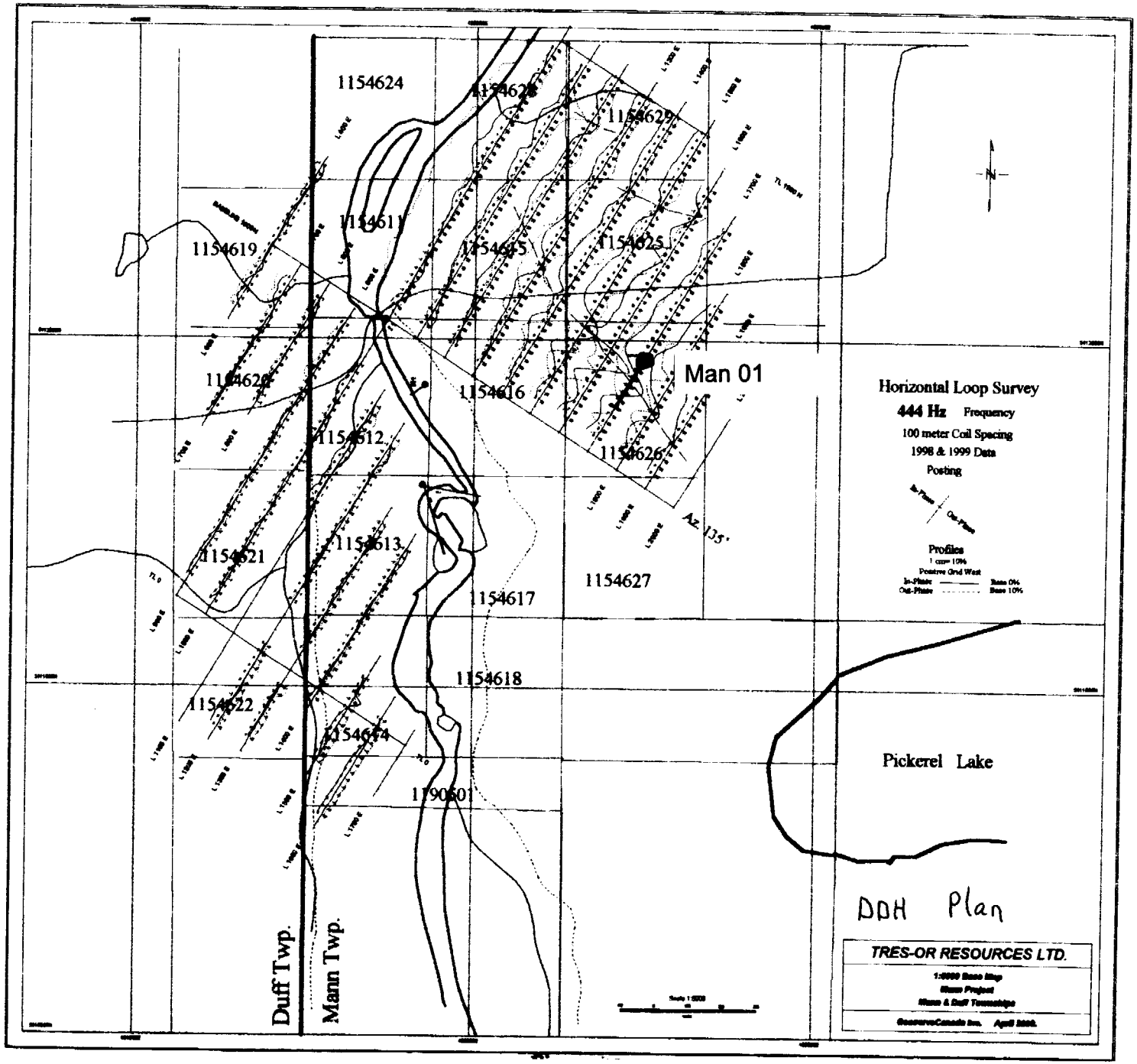
Claim 1154626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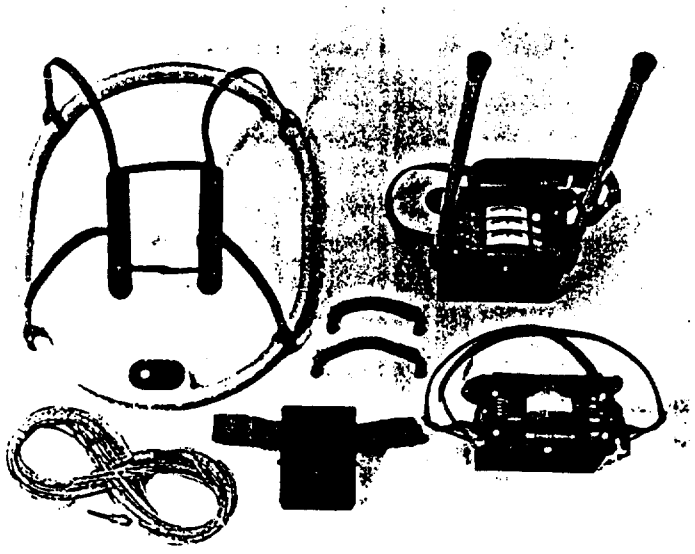
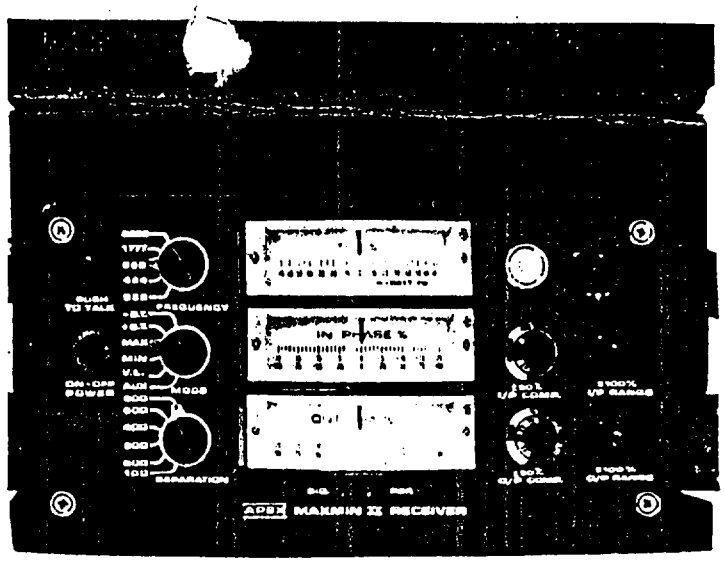
1154617
1154618
1154622
1154614
1190601
Duff Twp.
Mann Twp.
Pickerel Lake
Horizontal Loop Survey
444 Hz Frequency
100 meter Coil Spacing
1998 & 1999 Data
Posting
Profiles
DDH Plan
TRES-OR RESOURCES LTD.

Appendix II

Survey Procedure





SPECIFICATIONS

Frequencies: 222, 444, 888, 1777 and 3555 Hz.

Modes of Operation:

MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with reference cable.

MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.

V.L. : Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

Coil Separations: 25, 50, 100, 150, 200 & 250 m (MMII) or 100, 200, 300, 400, 600 and 800 ft. (MMIIF).
Coil separations in V.L. mode not restricted to fixed values.

Paramaters Read:

- In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
- Tilt-angle of the total field in V.L. mode.

Readouts:

- Automatic, direct readout on 90 mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
- Tilt angle and null in 90 mm edgewise meters in V.L. mode.

Scale Ranges:

In-Phase: ±20%, ±100% by push-button switch.
Quadrature: ±20%, ±100% by push-button switch.
Tilt: ±75% slope.
Null (V.L.): Sensitivity adjustable by separation switch.

Readability: In-Phase and Quadrature: 0.25 % to 0.5 % ; Tilt: 1%.

±0.25% to ±1% normally, depending on conditions, frequencies and coil separation used.

- 222 Hz : 220 Atm²
- 444 Hz : 200 Atm²
- 888 Hz : 120 Atm²
- 1777 Hz : 60 Atm²
- 3555 Hz : 30 Atm²

9V trans. radio type batteries (4) Life: approx. 35 hrs. continuous duty (alkaline, 0.5 Ah), less in cold weather.

12V 6 Ah Gel-type rechargeable battery. (Charger supplied).

Light weight 2-conductor teflon cable for minimum friction. Unshielded. All reference cables optional at extra cost. Please specify

Built-in intercom system for voice communication between receiver and transmitter operators in MAX and MIN modes, via reference cable.

Built-in signal and reference warning lights to indicate erroneous readings.

-40°C to +60°C (-40°F to +140°F).

6kg (13 lbs.)

13kg (29 lbs.)

Typically 60kg (135 lbs.), depending on quantities of reference cable and batteries included. Shipped in two field/shipping cases.

Specifications subject to change without notification.

8.0 SPECIFICATIONS

8.1 Magnetometry Specifications

Total Field Operating Range	20,000 to 100,000 nT (1 nT = 1 gamma).
Gradient Tolerance For Total Field:	±5000 nT/m.
Total Field Absolute Accuracy	±1 nT at 50,000 nT ±2 nT over total field operating and temperature range.
Resolution	0.1 nT.
Tuning	Fully solid-state. Manual or automatic mode is keyboard selectable.
Reading Time	2 seconds. For portable readings this is the time taken from the push of a button to the display of the measured value.
Continuous Cycle Times	Keyboard selectable in 1 second increments upwards from 2 seconds to 999 seconds.
Operating Temperature Range	-40°C to +50°C provided optional Display Heater is used below -20°C.

8.2 Sensor Options

In the following options the actual sensors are identical; however, mountings and cables vary.

Portable Total Field Sensor Option	Includes sensor, staff, two 2 m cables and backpack sensor harness. Weight of sensor, cable and staff is 1.9 kg.

	Staff is 30 x 600 mm collapsed and 1600 mm extended.
Base Station Sensor Option	Includes sensor, tripod, 50 m cable external power cable and analog chart recorder cable. Weight of sensor, cable and tripod is 6.5 kg. Tripod is 540 mm collapsed, 1650 mm extended.
Gradiometer Sensor Option	For use with the Portable Total Field Sensor Option, includes second sensor, cables and both a .5m and a 1m staff extender. Combined weight of Total Field and Gradiometer Sensor options with staff, extender and cables is 3.5 kg.

Ontario Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use): W0060.00278

Assessment Files Research Imaging

under the authority of subsections 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, t
sed to review the assessment work and correspond with the mining land holder. Questions about this collect
stry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

42A14SE2012 2.20393 MANN

* final revised *

wn Lands before recording a claim, use form 0240.

900 2.20393

1. Recorded holder(s) (Attach a list if necessary)

Name: Leonard Hill	Client Number: 1444
Address: X 122 Helen Ave	Telephone Number: 705 235-9736
Box 1022 S Porcupine P4N 4H	Fax Number:
Name:	Client Number:
Address:	Telephone Number:
	Fax Number:

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

☑ Geotechnical: prospecting, surveys, assays and work under section 18 (regs) ☑ Physical: drilling stripping, trenching and associated assays ☐ Rehabilitation

Work Type: Linecutting, Magnetometer, Horizontal Loop EM, Induced Polarization, Diamond drilling			Office Use
			Commodity
			Total $ Value of Work Claimed: $16,570
Dates Work Performed: From Day: Aug 14 Month: 1999 Year: TIK	To Day: Jan 20 Month: 2000 Year: TIK		NTS Reference
Global Positioning System Data (if available)	Township/Area: Dutt, Munn twps		Mining Division: Porcupine
	M or G-Plan Number: G-3234, G-3537		Resident Geologist District: Timmins

Please remember to:
- obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name: Todd Keast	Telephone Number: 705-235-2546
Address: 1209 Grace Ave	Fax Number: 705-235-2501
Name:	Telephone Number:
Address:	Fax Number:
Name:	Telephone Number:
Address:	Fax Number:

RECEIVED
JUN 12 2000
2:53pm
GEOSCIENCE ASSESSMENT OFFICE

4. Certification by Recorded Holder or Agent

I, Leonard Hill (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent: X L.E. Hill		Date: June 2/2000
Agent's Address	Telephone Number	Fax Number

0241 (03/97)

RECEIVED
JUN 8 2000
14.15
PORCUPINE MINING DIVISION

JUN 12 '00 14:50 PAGE.01

4. Certification by Recorded Holder or Agent

I, Leonard Hill (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent: X L.E. Hill — Date: June 2/2000

Agent's Address — Telephone Number — Fax Number

0241 (03/97)

RECEIVED
JUN 8 2000
14.15
PORCUPINE MINING DIVISION

RECEIVED
JUN 05 2000
9:50am
GEOSCIENCE ASSESSMENT OFFICE

5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the land where work was performed, at the time work was performed. A map showing the contiguous link must accompany the form.

W0040.00278

Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.		Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date
eg	TB 7827	16 ha	$26,825	N/A	$24,000	$2,825
eg	1234567	12	0	$24,000	0	0
eg	1234568	2	$ 8,892	$ 4,000	0	$4,892
1						
2						
3		See	Attached	Sheet		
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
	Column Totals					

I, Leonard Hill (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing	Date
X L. Hill	June 2/2000

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- ☑ 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- ☐ 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- ☐ 3. Credits are to be cut back equally over all claims listed in this declaration; or
- ☐ 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

2.20393

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved
	Approved for Recording by Mining Recorder (Signature)	

0241 (03/97)

RECEIVED
JUN 2 2000
14.15
PORCUPINE MINING DIVISION

RECEIVED
JUN 05 2000
9:50am
GEOSCIENCE ASSESSMENT OFFICE

Ontario Ministry of Northern Development and Mines

Schedule for Declaration of Assessment Work on Mining Land

Transaction Number (office use): W0060.00278

Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date.
1154619	1	$756	$ 800		
1154620	1	$591	$ 800		
1154621	1	$888	$ 800		$ 88
1154622	1	$780	$ 800		
1154611	1	$ 115	$ 800		
1154612	1	$ 392	$ 800		
1154613	1	$ 508	$ 800		
1154614	1	$ 760	$ 800		
1154615	1		$ 800		
1154616	1		$ 800		
1154617	1		$ 800		
1154618	1		$ 800		
1154624	1		$ 800		
1154625	1	$680	$ 800		
1154626	1	$10,895	$ 800	$8,813	$1,282
1154627	1		$ 800		
1154628	1		$ 800		
1154629	1		$ 800		
1190501	1	$205	$ 800		
Column Totals		$16,570	$15,200	$8,813	$1,370

0290 (02/96)

RECEIVED JUN 2 2000 14.15 PORCUPINE MINING DIVISION

RECEIVED JUN 05 2000 9:50am GEOSCIENCE ASSESSMENT OFFICE

Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use): W0060.00278

Personal information collected on this form is obtained under the authority of subsection 6 (1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, this information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Work Type	Units of work Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
Linecutting	9.0 Km	$325 / Km	$2,925
Horizontal Loop EM	6.275 Km	$200 / Km	$1,255
Magnetometer	8.15 Km	$100 / Km	$815
Induced Polarization	2 days	$850 / Day	$1,700
Diamond Drilling	200 metres	$40 / metre	$8,000
Associated Costs (e.g. supplies, mobilization and demobilization).			
Drill mobe			$1,000
Field supplies			$575
Transportation Costs			
Vehicle, gas			$175
Food and Lodging Costs			
Meals			$125
		Total Value of Assessment Work	$16,570

2.20393

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK x 0.50 = Total $ value of worked claimed.

Note:
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

I, Leonard Hill (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as X L.E. Hill (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

Signature: X L.E. Hill Date: Jun 2/2000

RECEIVED JUN 8 2000 14.15 PORCUPINE MINING DIVISION

RECEIVED JUN 05 2000 9:50am GEOSCIENCE ASSESSMENT OFFICE

0212 (03/97)

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Ontario

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9845
Fax: (877) 670-1555

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

July 11, 2000

LEONARD EDWARD HILL
122 HELEN AVENUE
P.O. BOX 1022
SOUTH PORCUPINE, Ontario
P0N-1H0

Dear Sir or Madam:

Submission Number: 2.20393

Status

Subject: Transaction Number(s): W0060.00278 Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact JIM MCAULEY by e-mail at james.mcauley@ndm.gov.on.ca or by telephone at (705) 670-5880.

Yours sincerely,

Steven B. Beneteau

ORIGINAL SIGNED BY
Steve B. Beneteau
Acting Supervisor, Geoscience Assessment Office
Mining Lands Section

Correspondence ID: 15056
Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.20393

Date Correspondence Sent: July 11, 2000 **Assessor:** JIM MCAULEY

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W0060.00278	1154619	DUFF, MANN	Approval	July 11, 2000

Section:
14 Geophysical MAG
14 Geophysical EM
14 Geophysical IP
16 Drilling PDRILL

Correspondence to:
Resident Geologist
South Porcupine, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):
LEONARD EDWARD HILL
SOUTH PORCUPINE, Ontario

Correspondence ID: 15056

G-3534

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M.+ S. – MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File
(RI) — SEC 36/80	W1/80	8/8/80	M ++ S	

Subdivision of this township into lots and concessions was annulled May 10, 1963.

(ST) — SNOWMOBILE TRAIL

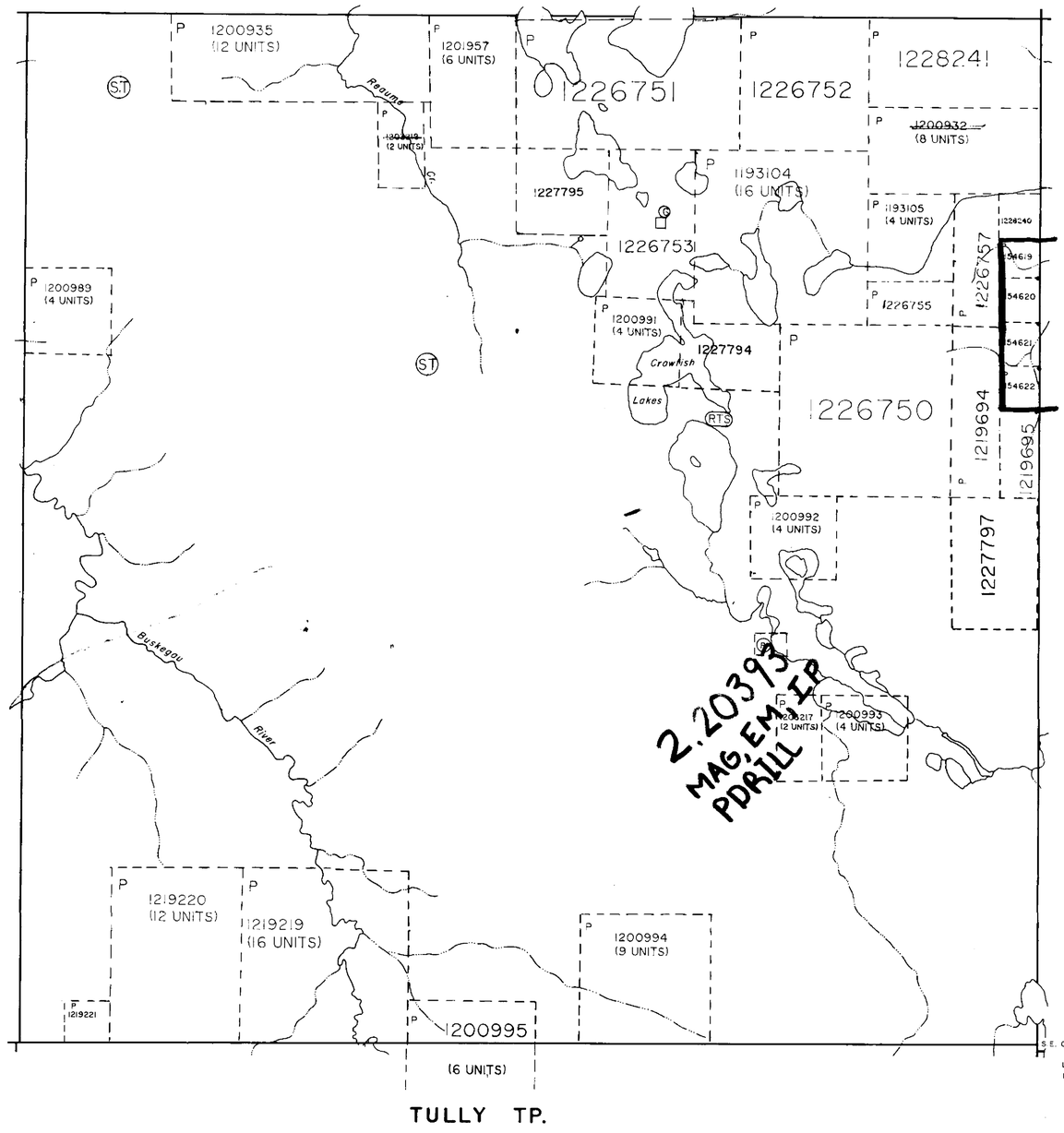
SAND and GRAVEL

(G) — QUARRY PERMIT

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES. AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON

J.S.H.

REAUME TP.



LUCAS TP.

MANN TP.

TULLY TP.

LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" , SURFACE RIGHTS ONLY	◓
" , MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	◨
" , MINING RIGHTS ONLY	◧
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	Ⓡ
CANCELLED	Ⓒ
SAND & GRAVEL	Ⓢ
LAND USE PERMIT	✳

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1.

REMOTE TOURIST SITE (RTS)

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000
METRES 0 200 1000 (1 KM) 2000 (2 KM)

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES AND ACCURACY IS NOT GUARANTEED

TOWNSHIP

DUFF

JUN 03 1999

THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

M.N.R. ADMINISTRATIVE DISTRICT

COCHRANE

MINING DIVISION

PORCUPINE

LAND TITLES / REGISTRY DIVISION

COCHRANE

Ministry of Natural Resources — Land Management Branch — Ontario

Date MARCH, 1985

ACTIVATED JAN. 23, 1997 SK

Number G-3234

AREAS WITHDRAWN FROM DISPOSITION

m.R.O. - MINING RIGHTS ONLY
S.R.O. - SURFACE RIGHTS ONLY
M.& S. - MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File

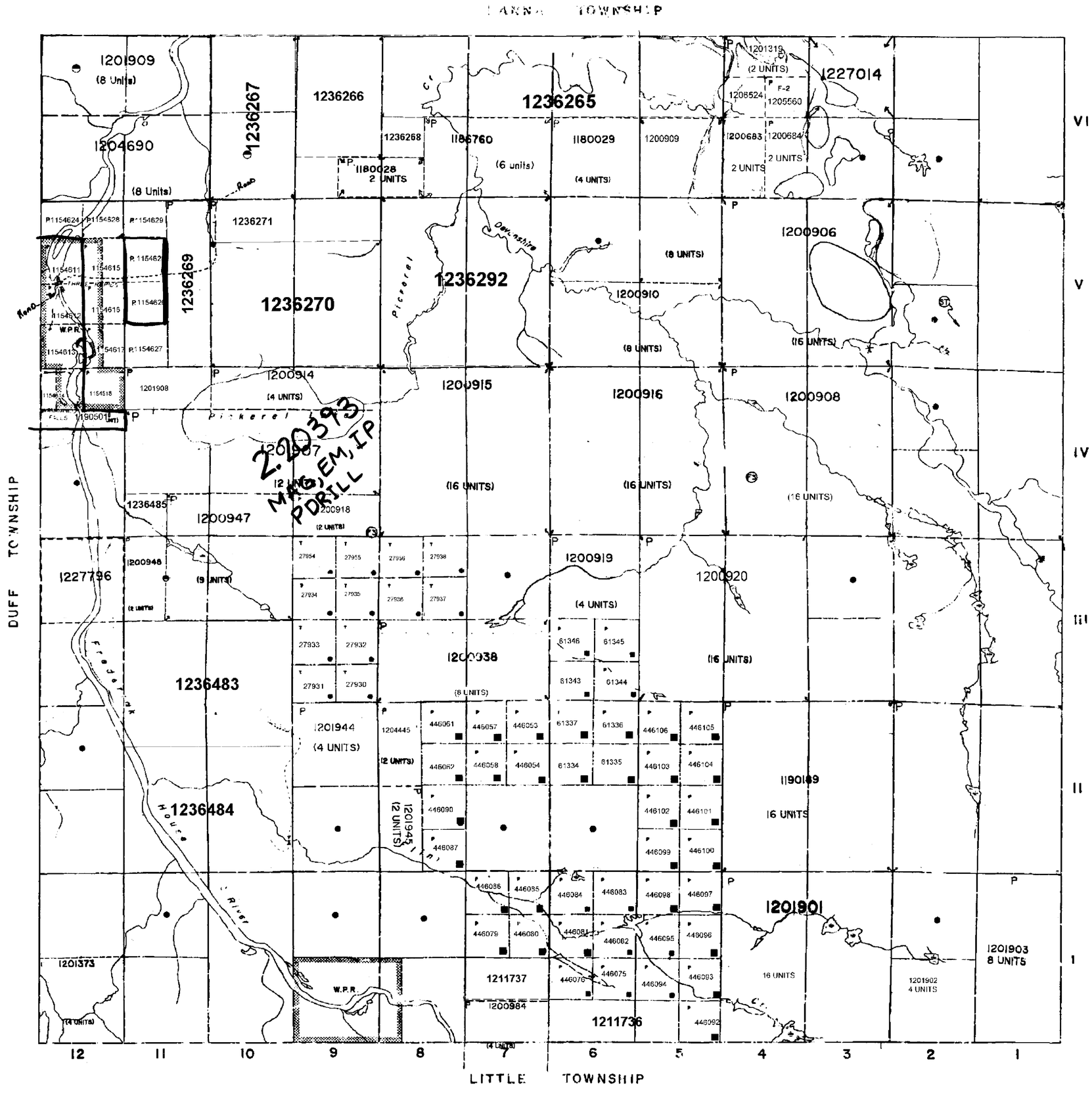
WATER POWER RESERVE

W.O. 87 / 87

SURFACE AND MINING RIGHTS RE-OPENED TO PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 36 OF THE MINING ACT R.S.O. 1980 EFFECTIVE 80-SEP-08 AT 7AM E.S.T. ORDER NO. O-P 6/90 NR DATED 80-AUG-22.

NOTE+ PII25837 PLOTTED IN ERROR. S/B PII14737.

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.



LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" , SURFACE RIGHTS ONLY	◒
" , MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	■
" , MINING RIGHTS ONLY	■
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	Ⓡ
CANCELLED	⊗
SAND & GRAVEL	○
LAND USE PERMIT	*

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO 1913, VESTED IN ORIGINAL PATENTEE BY MINES AND LANDS ACT, R.S.O. 1970, CHAP. 268, SEC. 6, SUB-SEC. 1.

L.U.P.

SCALE 1:20 000

(57) SNOWMOBILE TRAIL (LAND USE PERMIT) NOTICE RECEIVED 82-DEC-08

Received Sept 22/86

TOWNSHIP

MANN

M.N.R. ADMINISTRATIVE DISTRICT

COCHRANE

MINING DIVISION

PORCUPINE

AND TITLES / REGISTRY DIVISION

COCHRANE

Ontario

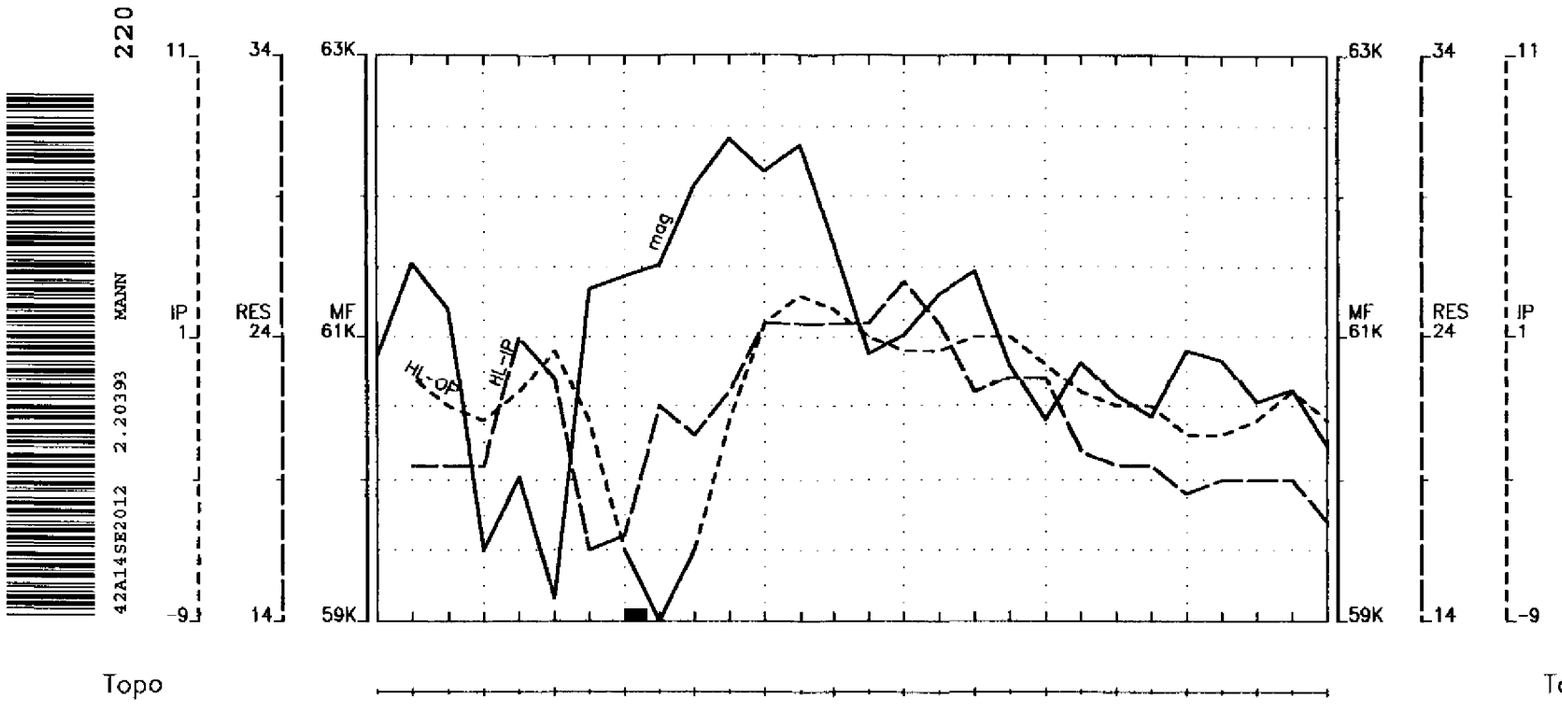
Ministry of Natural Resources

Ministry of Northern Development and Mines

Date: SEPTEMBER, 1986

Number: G-3537

42A14SE2012 2.20393 MANN 210

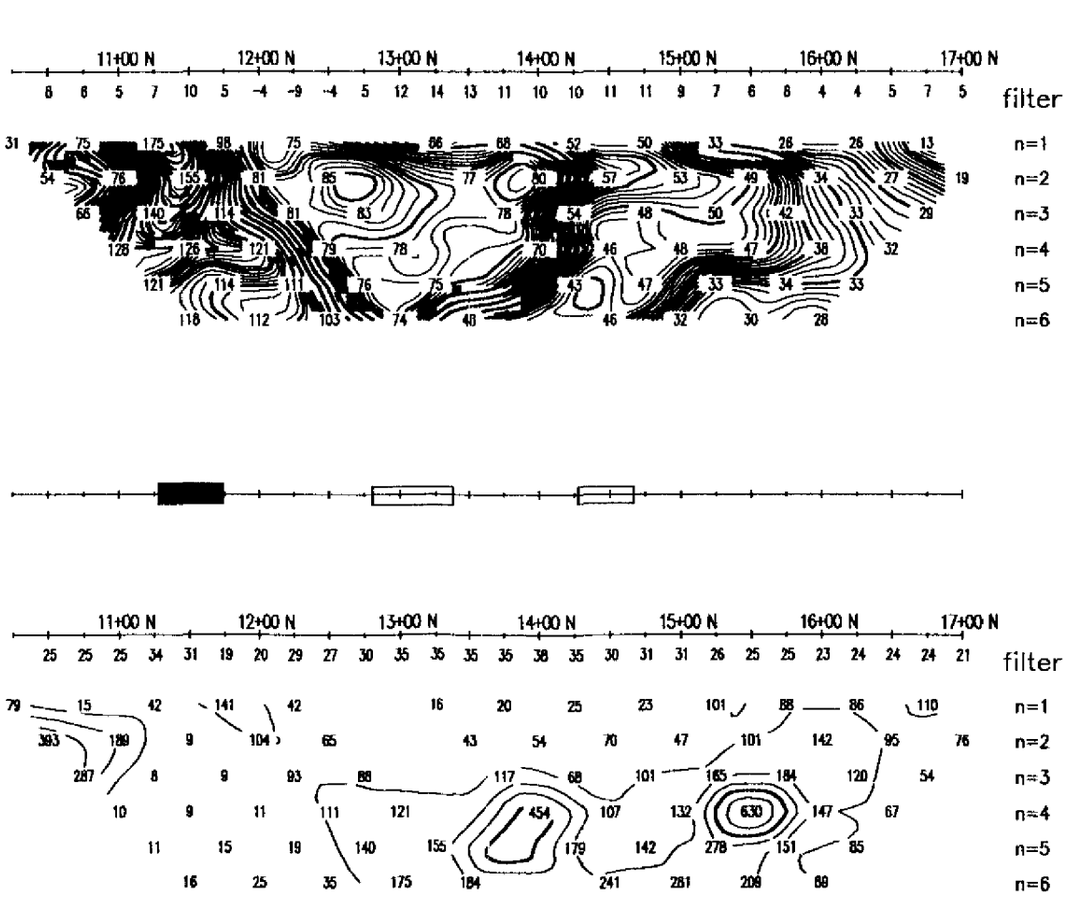


Topo

Topo

Interpretation

Interpretation



Chargeability
mV/V

Chargeability
mV/V

Interpretation

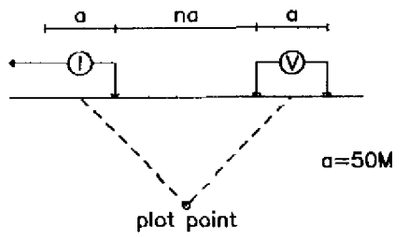
Interpretation

Resistivity
ohm/meters

Resistivity
ohm/meters

L 1700E

Pole-Dipole Array



Cont. Intervals **Profiles**

Resistivity: 100 ohm/m
Chargeability: 1mV/V

MaxMin Profiles

444 Hz Survey
100m Coil separation

INSTRUMENTS

BRGM Elerec 6, Time Domain Receiver
1760mSec Total Intergration Time, 80mS Delay.
MT= (80+80+80+80+160+160+160+320+320+320) mSec

Pheonix 3000 Watt Transmitter
8Second Total Duty Cycle, 2Sec On/Off Time.

INTERPRETATION

- Low Effect
  Poorly Chargeable mV/V, IP effect
  Low Apparent Resistivity, rho
- Moderately Low Effect
- Moderately High Effect
- High Effect
  Good Chargeability mV/V, IP effect
  High Apparent Resistivity, rho

SCALE

50 0 50 100 150 200 250 300
(meters)

Leonard Hill Property

Induced Polarization Survey
Mann Township
Porcupine Mining Division

Geoserve Canada Inc. Oct. 1999

13N

12N

11N

T.L 10N

10N

9N

8N

7N

6N

6N

5N

4N

3N

2N

1N

Duff Twp | Mann Twp

1154611

1154619

1154612

L 6E

L 7E

L 8E

1154620

1154613

R.L 0+0

L 9E

L 10E

1154621

1154614

1S

2S

3S

L 11E

L 12E

1154622

L 13E

L 14E

L 15E

L 16E

L 17E

1190501

Scale 1:5000 or 1cm = 50m

0 50m 100m 150m 200m

-10% 0 +10%

In-Phase

Quadrature

Profile Scale 1cm = 10%

Mann and Duff Township Project	
Porcupine Mining Division	
Ground Geophysical Survey	
HLEM. Maxmin II Survey 1777 Hz.	
100 m. Cable Spacing	
Scale 1:5000	NTS
Drawn By: D.R-Healey	NOV 1999

MAP 1

42A14SE2012 2.20393 MANN

230

13 N
12 N
11 N
TL 10 N
10 N
9 N
8 N
7 N
6 N
5 N
4 N
3 N
2 N
1 N
1S
2S
3S

Duff Twp | Mann Twp

1154619
1154620
1154621
1154622
1154611
1154612
1154613
1154614
1190501

L6E L7E L8E L9E L10E L11E L12E L13E L14E L15E L16E L17E

Bato

claims Twp Mann

Scale 1:5000 or 1cm = 50m

0 50m 100m 150m 200m

-10% 0 +10

In-Phase

Quadrature

Profile Scale 1cm = 10%

MAP 2

Mann and Duff Township Project	
Porcupine Mining Division	
Ground Geophysical Survey HLEM Maxmin II Survey 444 Hz. 100 m. Cable Spacing	
Scale 1:5000	NTS
Drawn By: D.R. Healey	NOV. 1999

42A14SE2012 2.20393 MANN

240

250

Duff / Mann Twp / Twp

12N
11N
10N
9N
8N
7N
6N
5N
4N
3N
2N
1N
1S
2S
3S

L6E L7E L8E L9E L10E L11E L12E L13E L14E L15E L16E L17E

1154611 1154614 1154619 1154620 1154613 1154614 1154622 1190501

Scale 1:5000 or 1cm = 50m

0 50m 100m 150m 200m

58,000 gammas subtracted from all readings

- surveyed by loop method

- instrument used : Barringer Research
GM 122 Magnetometer
Serial # 6229

MAP 3

Mann and Duff Township Project	
Porcupine Mining Division	
Ground Geophysical Survey	
Total Field Magnetics	
Contours	
Scale 1:5000	NTS
Drawn By: D.R. Healey	NOV 1999